48” Heater Shaker Unit
Operation Manual

STSinks Heater Shaker Guide PDF

Please read the instructions carefully before using the product.

Preface:

The contents in the manual will help show you how to use and maintain our products safely and reasonably, so as to avoid or reduce the damage to the machine caused by human factors, so that it can better serve you. In addition, we will provide you with technical support, please contact us at Support@stsinks.com for any questions regarding our machines.

Contents:

Chapter I Instructions of Machine Operation

1.1 Safety Warning

1、Power supply: single-phase AC, voltage 220V (±10%). Power: 6kw. 30amp

2、Only the type of power supply identified in the label of the printer can be used. Depending on the country and region, 110V or 220V AC power supply may be selected.

3、Connect all equipment to a properly grounded outlet and avoid using outlets with those that switch frequently between on and off (such as copiers, air conditioning systems) in the same circuit.

4、Avoid using outlets that are controlled by wall switches or automatic timers.

5、Keep your computer system away from potential sources of electromagnetic interference, such as speakers or cordless phone stands.

6、Do not use damaged or broken power cords.

7、If using an additional power cord, remember that the total amperage of the equipment plugged into that additional power cord should not exceed the amperage rating of that power source. In addition, remember that the total amperage of all equipment plugged into the wall should not exceed the amperage rating of the wall outlet.

8、Do not try to repair their own printers, problems, please seek timely printer repair technicians.

9、For the safety of people and machines, please be sure to connect the ground, the specific requirements of the installation staff informed.

10、Can not unplug the print line and power cord with electricity, otherwise it will cause damage to the motherboard.

11、Ensure that the power supply voltage matches the power cord and machine nameplate voltage.

12、Move the machine, pay attention to pull out the power supply plug.

13、The machine table must ensure that it can bear the weight and not swing when working.

14、Please make sure the machine is grounded properly.

15、Please avoid using this machine in thunderstorm to avoid lightning strike.

1.2 Installation Location And Use of Environmental Considerations

1、Please place the shaking powder machine on a level, stable and larger than the plane of the shaking powder machine. If the shaking machine is tilted or has a certain angle, the machine may not be able to carry out normal work.

2、Leave enough space around the shaking machine to ensure normal ventilation of the shaking machine.

3、Place the powder shaker close to the wall socket so that the plug can be easily inserted and removed.

4、Avoid using the printer in places where the temperature and humidity are likely to change dramatically. Avoid direct sunlight, bright light or heat sources to the printer.

5、The machine must be away from strong interference radiation sources.

6、Shake the powder machine using humidity: 38%-50%. In order to make the machine can be in the best condition operation, please configure the air conditioning and temperature and humidity meter in the room.

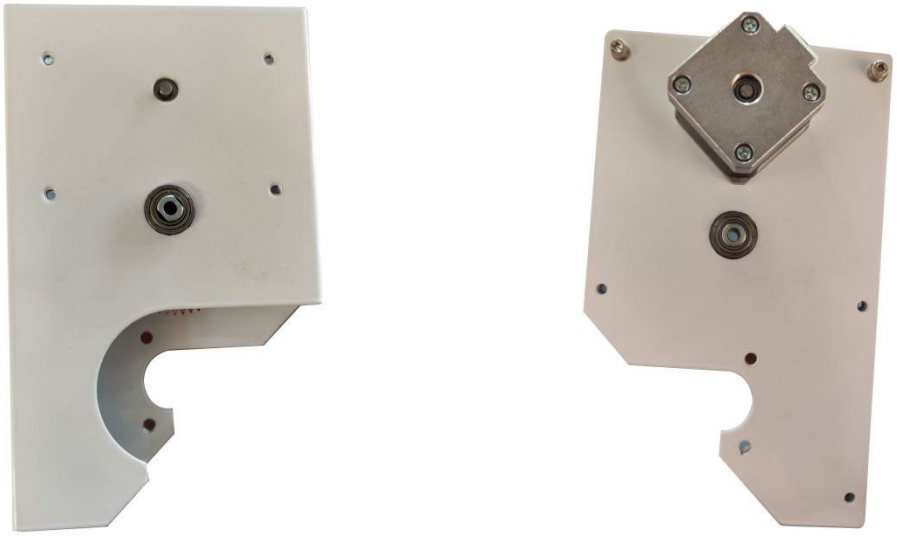
Chapter II Machine Installation

Open the packaging box of the machine. The machine is usually shipped after installation, with only the paper receiving shaft and cooling fan remaining to be installed. Take out the machine accessories inside, which include a paper receiving shaft and fan box, two support brackets, and several screws.

2.1 Installation Steps for The Left And Right Support Frame of The Take-Up Roll Shaft

The assembly steps are shown in the following introduction:

(1) The screws on the left and right support brackets are unscrewed with a screwdriver, and the screws are placed aside first. Install the left support frame on the corresponding position on the left side, and screw the screws just screwed down again using a screwdriver.



The picture above shows the left and right support frame of paper take-up shaft

The view of the left side after installation is shown above

(2) Repeat the installation steps on the left side for the right support frame.
(3) After installing the left and right side support brackets, place the paper take-up stick on the corresponding left and right support brackets to complete the whole process of loading the paper take-up shaft.

Take-up roll shaft style:

2.2 Fan Box Installation Steps

Place the fan box on the upper end of the paper take-up shaft, leaving screw holes on the left and right sides, and use a screwdriver to screw in the corresponding screws to complete the entire installation procedure.
The fan box is shown in the figure:

:

After installation, the following figure is shown:

2.3 Front And Side View of The Whole Machine

Front side of the machine spreading end

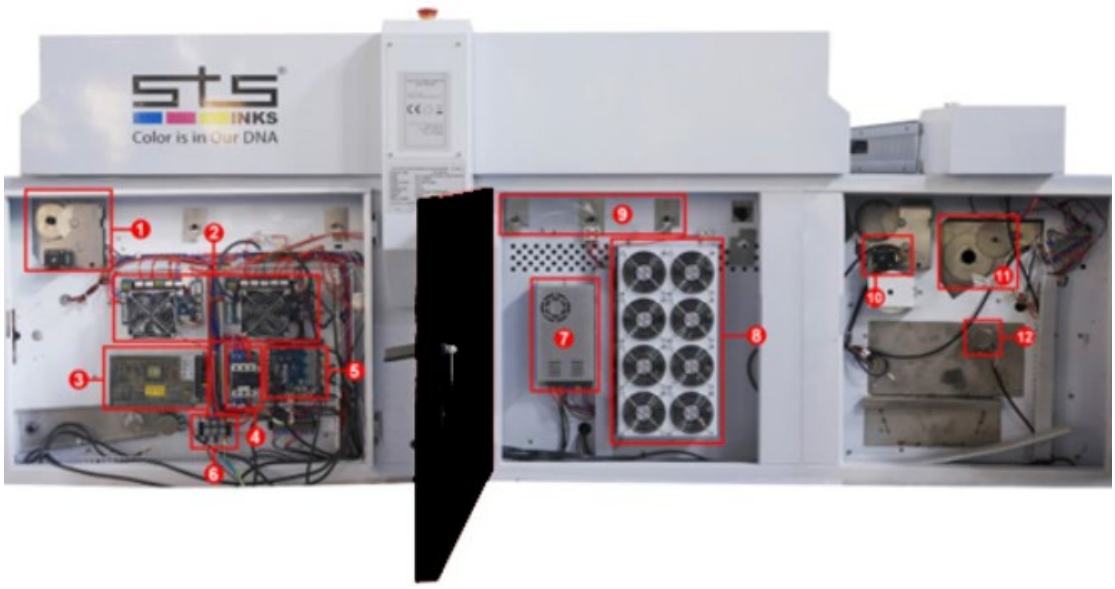
Machine front winding end

Machine side purifier end

Side board end of the machine

Chapter III Introduction of The Main Internal Parts And Lines of The Powder Shaking Machine

3.1 Introduction to The Internal Parts of The Powder Shaker



(1) motor: generate driving force, become the power source of various electrical appliances and production machinery and other products.

(2) Fan: cooling function, here two cooling fans are mainly for five-way board cooling, to avoid the possibility of high temperature, resulting in five-way board burn.

(3) power box: adjustable voltage, for different regions 115V-230V, can be set.

(4) AC contactor: AC contactor is an electrical apparatus suitable for connecting and breaking circuits and AC motors from a distance. Mainly used to control the AC motor start, stop, reverse, speed regulation, and can be

combined with thermal relays or other appropriate protection devices to protect the motor may occur overload or phase failure, can also be used to control other electrical loads such as: electric heaters, electric lighting, welding machines, capacitor banks, etc.

(5) motherboard: the main function of the motherboard is to transmit a variety of electronic signals. Various components are connected through the motherboard, in normal operation of other I/O devices must be manipulated through the motherboard to complete.

(6) fire ground zero wire junction: red corresponds to the fire wire, blue is the zero wire, yellow-green is the ground wire.

(7) power box: disperse the power pressure.

(8) cooling fan: flue cooling to prevent overheating loading.

(9) lamp heating line: shaking powder machine internal heating tube line.

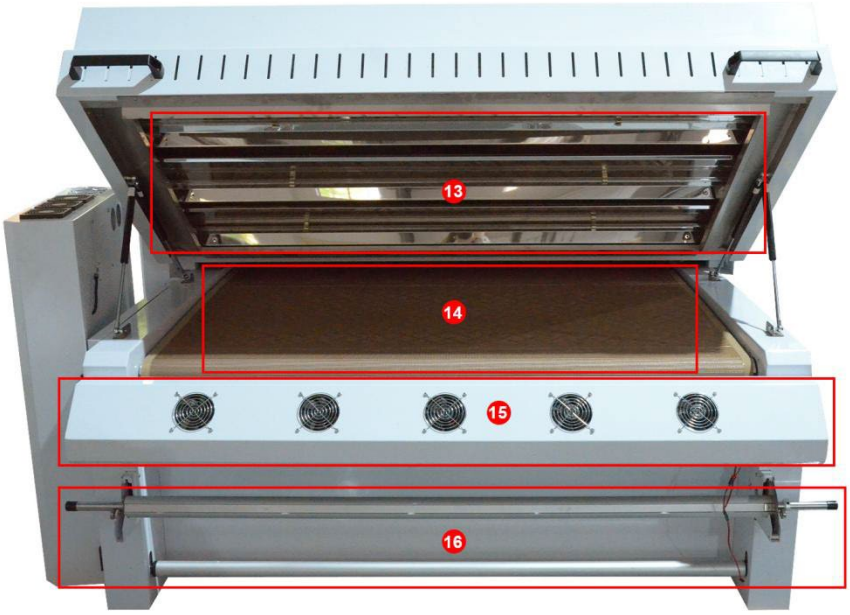
(10) motor: dispersing the role of the current under the oven part.

(11) gear: drive the operation of the components.

(12) Angle: synchronized with the gravity sensor, is to sense the weight of the hot melt powder to prevent too much or too little to affect the normal printing.

(13) Heating lamp: ensure that the hot melt powder and design pattern can be melted and dried at the set temperature.

(14) Guide tape: The role of transferring PET film.



(15) Fan: cooling and drying function.
(16) Paper collection system: automatic paper collection function

(17) PLC touch screen: relevant parameter setting and temperature adjustment control

(18) Powder spreading box: the part where the hot melt powder is placed.

(19) Fan: The function of the fan here is to fix the PET film and prevent the PET film from buckling and curling.

(20) Emergency stop button: to prevent problems in the operation process, the need for emergency stop, so set up an emergency stop button on each side.

(21) double purifier: purify the shaking powder machine in the operation process of the overflow of dust, with environmental protection function.

(22) fan: the following is the heating lamp, the fan is used here to dissipate heat to avoid high temperature.

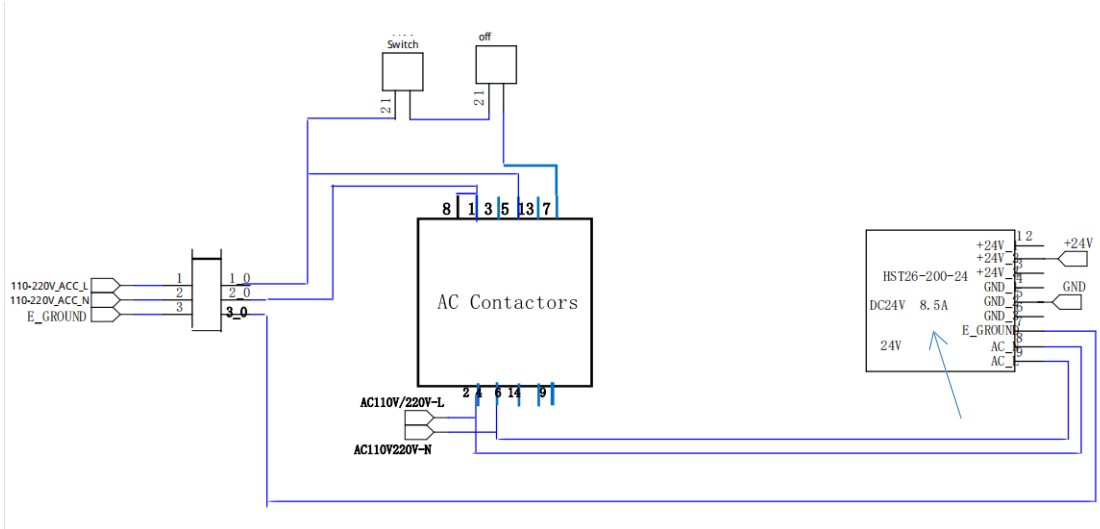
(23) smoke exhaust fan: to exhaust the smoke generated during the operation of the shaking powder machine.

(24) purifier area: the role of purifying smoke.

(25) Suction platform: to ensure that the PET film is smoothly adsorbed on the platform and stable paper walking.

3.2 The Main Board of The Line And The Wiring Schematic Show

(1) Example diagram of AC contactor



As shown in the picture, the blue arrow points to: 24V power box.

(2) Five-way board 1

In the figure below, from left to right

Heat5: Standby heating

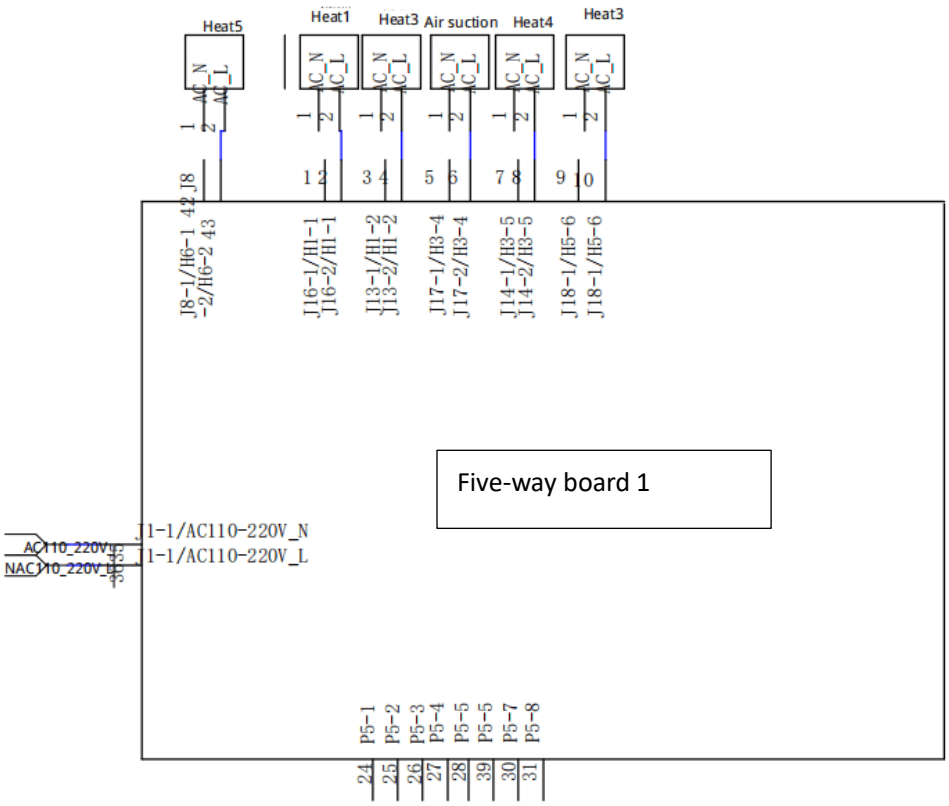
Heat1: Heating

Heat3: Heating

Air suction: standby heating

Heat4: Upper oven heating2

Heat3: Purification centrifugal fan



(3) The main board circuitry and the five-way board2 explain the following:

Heat senosr1: preheat temperature control

Heat senosr2: Sprinkling box temperature control

Heat senosr3: Platform temperature control

Powder senosr4: Powder box sensor

Paper senosr5: Tension take-up sensor

Paper motor: Paper suction roller motor

Motor1: Mesh belt motor

Motor2: Take-up control motor

Motor3: Powder spreading motor

The five-way board 2 wiring diagram explains that

In order from left to right:

Heat5: Standby heating

Heat1: Powder spreading heating

Heat3: Lower oven heating1

Air suction: Suction air

Heat4: Upper oven heating 2

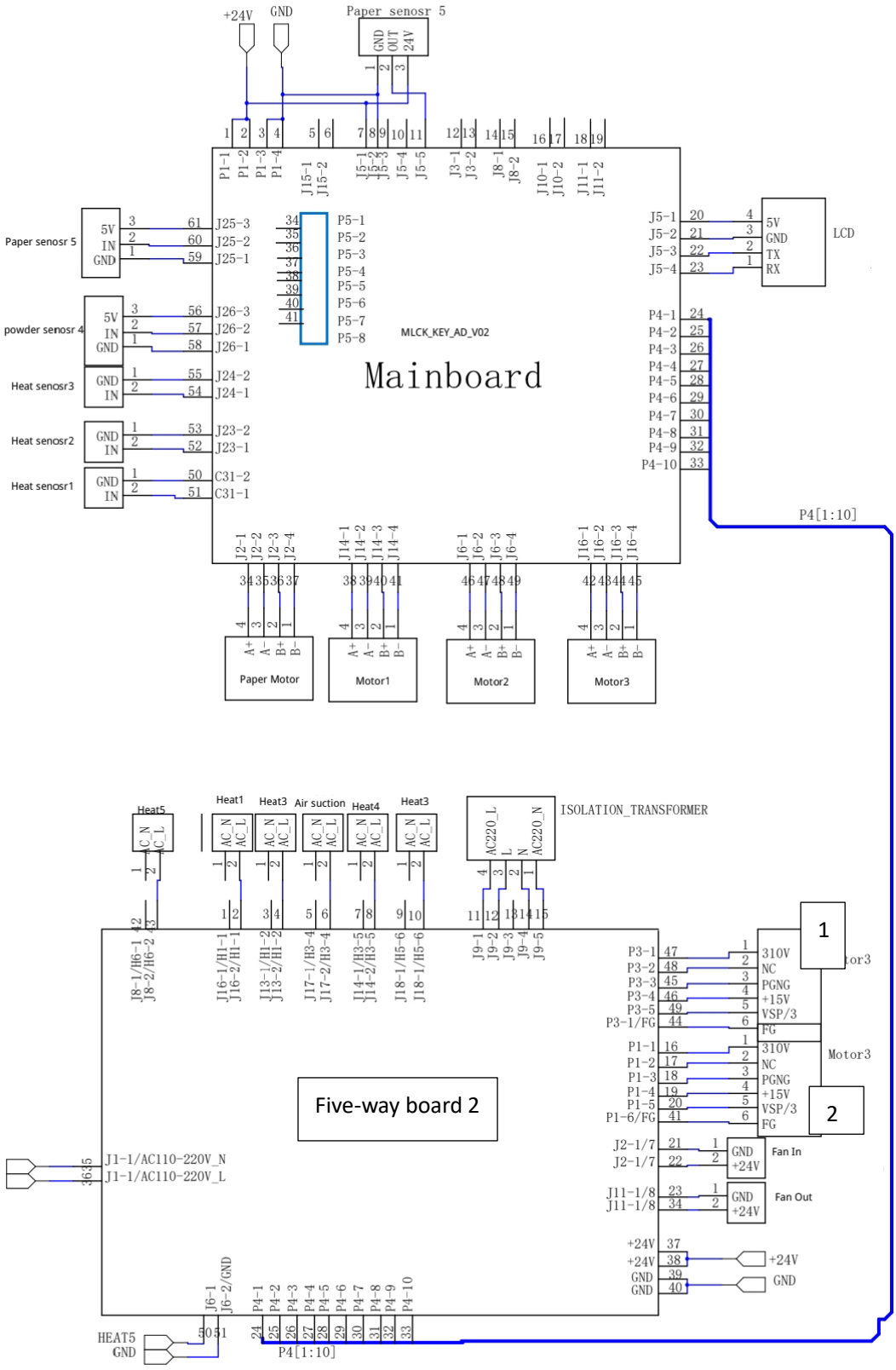
Heat3：Lower oven heating2

Label 1 motor3：De-fume motor

Label 2 motor3: powder removal motor

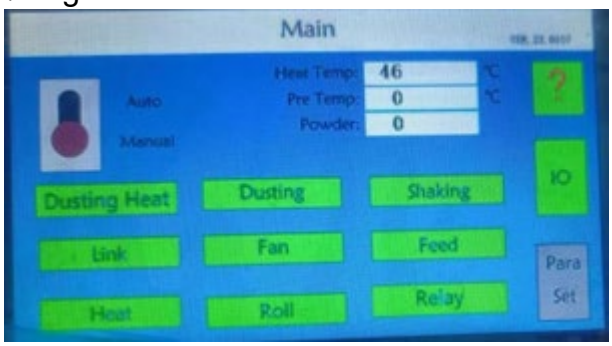
Fan in: Fan out (out of the paper platform blowing air)

Fan out: fan (suction wind)


+24V
GND
Paper senosr 5
GND
OUT
24V
Paper senosr 5
5V
IN
GND
powder senosr 4
Heat senosr3
Heat senosr2
Heat senosr1
MLCK_KEY_AD_V02
Mainboard
LCD
5V
GND
TX
RX
P4[1:10]
Paper Motor
Motor1
Motor2
Motor3
Heat5
Heat1
Heat3
Air suction
Heat4
Heat3
ISOLATION_TRANSFORMER
AC220_L
AC220_N
Five-way board 2
310V
NC
PGNG
+15V
VSP/3
FG
Motor3
Fan In
Fan Out
GND
+24V
J1-1/AC110-220V_N
J1-1/AC110-220V_L
HEAT5
GND
P4[1:10]

3.3 Details of PLC Touch Screen

：Figure 1:



Automatic: switch to automatic operation mode (the system automatically controls the complete process of the powder spreader).

Manual: switch to manual operation mode (finish the complete process by manually controlling the switches of each device function of the powder spreader).

Heat Temp: real-time temperature of heating device.

Pre Temp: real-time temperature of the front heating plate5.

? : Version number

Dusting Heat: The heating belt at the dusting area is heated to heat the powder to dehumidify.

Link: turning on in automatic mode, the sensor under the heating plate stops working. and enters automatic operation mode, and the suction at the shaking paper is turned on.

Heating: heating device switch, control the heating function on and off.

Dusting: powder spreading switch, which controls the opening and closing of the powder spreading function5.

Suction: switch of the suction device to control the opening and closing of the suction device.

Roll: the switch of the winding device, which controls the operation and closing of the winding device.

Shaking: shake powder switch, control the on and off of the powder shake function.

Feed: the function of feeding paper feeding transport.

Relay: Purifier to purify the fumes generated during machine operation and prevent dust spillage.

IO: Click the button to enter the monitoring interface.

Para Set: Click to enter the parameter setting interface.

Figure 2: (Settings shown below might not be CORRECT)

Shaking Strength: Click to set the speed of shaking powder, the greater the value of the greater the intensity of powder removal.

Heat Temperature: Click to set the temperature of the oven, the larger the value the higher the temperature.

Feed Speed：click to set the running speed of the heating mesh belt, the larger the value, the faster the running speed.

Pre temperature: Preheating temperature: Click to set the preheating temperature of the heating plate before setting (the preheating temperature should be changed according to the temperature. If the weather is colder, increase the temperature, and the temperature will be slightly lower).

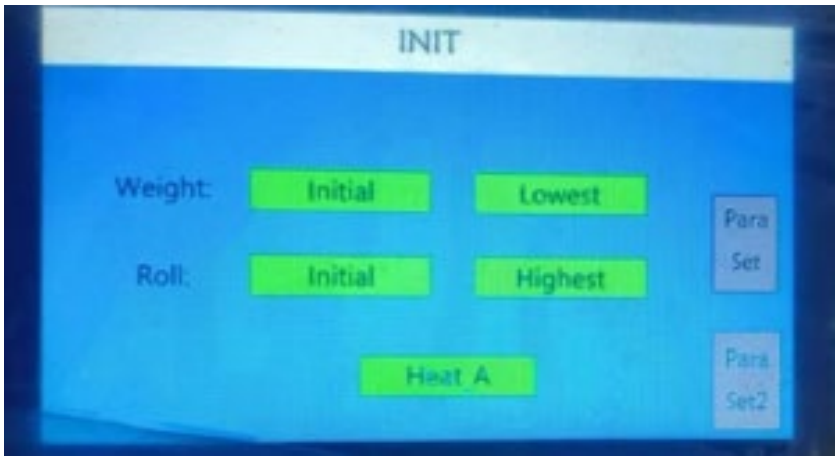
Roll Interval: Click to set the delivery interval time of the delivery device, the larger the value, the slower the delivery speed.

Tension: Click to set the speed of paper collection, the larger the value the faster the speed of paper collection.

Main: Click to enter the main menu options screen.

INIT: Initial setting of the highest and lowest values of the spreading angle, and setting of the lowest and highest positions of the take-up angle.

Figure 3: Calibration for Weight basket & Take up roller



Weight:
Initialization (highest setting of dusting angle)
Lowest position (Lowest setting of dusting angle)

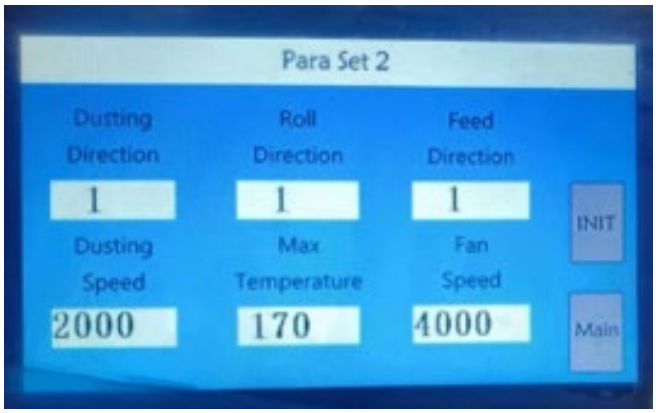
Roll:
Initialization (Paper take-up angle minimum setting)
Highest position (Highest position setting for paper take-up angle)

Heat A : Prevent damage to the heating tube or supply the heat source in time when the temperature needs to be raised.

Para Set: Click to enter the detailed setting interface of various parameters.

Para Set2: Click to enter the detailed setting interface of various parameters2.

Figure 4: (Settings might not be CORRECT)



Dusting Direction: Control the direction of falling hot melt powder in the shaking powder tank.

Roll Direction：Control the direction of winding.

Feed Direction：Control the guide belt to run towards the tail at the set speed.

Dusting Speed: Adjust the powder spreading speed according to the printing needs and make efficient use of hot melt powder.

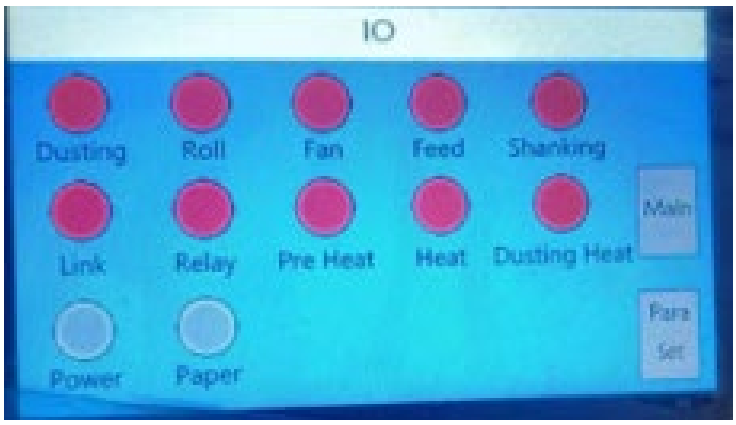
Max Temperature：The maximum temperature that can be set for the machine, too high may have a negative impact on the machine.

Fan Speed: The suction speed can be adjusted in real time according to printing needs to ensure stable paper walking.

INIT: Initialization settings.

Main: Enter the main menu to set various parameters.

Figure 5:



Dusting: whether the dusting device is working, the red light is on when it is working, and the white light is on when it is not working.

Roll: Whether the rewinder is working, the white light is on when it is working, and the red light is on when it is not working.

Fan: Suction air working state.

Feed: the sensor under the preheating platform does not light up when it senses paper feeding, and it lights up red when it does not sense paper feeding.

Shaking: When the powder is working, the red light is on, and the white light is on when it is not working.

Link: When auto mode is selected, the red light is on when working and the white light is on when not working.

Relay: Avoid dust spillage and adsorption of fumes. Red light when working, white light when not working.

Pre heat：The front heating plate heats up the real-time temperature and lights up red when working and white when not working.

Heat：You can check the temperature when the oven is heated in time, and the red light is on when it is working and the white light is on when it is not working.

Dusting Heat: You can check the temperature in the state of spreading powder

in time, and the red light is on when it is working, and the white light is on when it is not working.

Power: Power Switch.

Paper: Paper collection function, red light when working, white light when not working.

Chapter IV Machine Daily Maintenance

1.
Daily machine operation, pay attention to maintaining the temperature and humidity environment in the machine parameters.

DTF shaking powder machine after running for a period, pay attention to the operation of the gears to see if clean; go paper or shaking powder speed has an abnormal situation, remember to apply lubricant to the gears, it is recommended that the use of 1-2 months shall be coated with lubricant on top of the gears to reduce friction.

3、DTF shaking powder machine using supplies is PET film, in the case of high temperature baking, it is inevitable that oil will float out, these waste oil will leak into the design of the waste oil pipe, waste oil pipe in the purifier inside. Regular cleaning is sufficient.

4、The machine must be connected to the ground; when the air is dry, static problems cannot be ignored, when using certain backing and light sheet media, more electrostatic charge (especially in the paper feed work quickly); electrostatic charge can lead to damage to the machine and board security, take the ground wire will be the only way to discharge static electricity. Because the human body itself is a huge source of static electricity, so when operating the ink head with electricity, make sure that both hands have been discharged (contact with a grounded metal body or wear a de-static hand ring), otherwise it is easy to cause damage to the board and printhead.

5、Regularly check the maintenance station cleaning work.

6、Please do not place tools or other items on the printing platform or cover of the machine to avoid unnecessary losses due to untimely cleaning before the machine is running.

7、The machine must be guarded when working. (There should be a full-time operator).